

# Drinking Water State Revolving Fund Green Project Reserve

- Interim –



## Alpine Meadows W&SD FY13 Water System Project

SRF Loan #DW 1305 (pop. 240)

\$1,800,000

### Interim Green Project Reserve Justification

#### Business Case GPR Documentation

INSTALLS 9,480 FEET OF NEW PVC WATER DISTRIBUTION SYSTEM PIPING (Water Efficiency). Business Case GPR per the criteria requirements 2.4-1...*reducing water consumption*; per 2.4-3: *Efficient water use...reducing the amount of energy required by a drinking water system...therefore, there are also energy and financial savings*; also per 2.4-4: *Proper water infrastructure management should address where water losses could be occurring in the system and fix or avert them*; also per 2.5-2: *Distribution pipe replacement ...to reduce water loss and prevent water main breaks*; also (Energy Efficiency) Business Case GPR per 3.5-1: *Energy efficient...upgrades*; and, per 3.5-5: *Projects that achieve the remaining increments of energy efficiency*. (\$677,347).

## Distribution System Upgrade

### Summary

The deteriorated and undersized water distribution system piping in the Alpine Meadows Water and Sewer District requires replacement in order to: (i) reduce water losses; (ii) reduce pumping costs; and (iii) provide adequate drinking water flow and pressure.

- Estimated loan amount = \$1,800,000
- Estimated energy efficient (green) portion of loan = \$677,347 (38%)

### Background<sup>1</sup>

- The existing distribution pipelines in the District are old and undersized.
- Current peak daily water demand = 52 gpm.
- There are currently 7400 LF of undersized 4" diameter distribution pipe and 2" service lines. The project will replace that pipe with 7400 LF of 10", 8" and 6' diameter PVC distribution pipe.



### Results

Replacing these lines with properly sized lines at will result in:

- Saving water as it has been calculated the existing system currently experiences losses of 21.8%; and
- Saving energy through reduced pumping costs for less energy to pump through properly sized lines (reduced friction factor).

### Conclusion<sup>2</sup>

- The replacement of undersized water distribution pipe with properly sized pipe decreases system friction, increases water flow, and saves energy by reducing the amount of pumping required.
- **GPR Costs:** Distribution System Piping Upgrades = \$677,347

**GPR Justification:** The prioritized replacement of undersized water distribution piping as recommended in the Facility Planning Study is GPR-eligible by a Business Case (Water Efficiency) GPR per 2.4-1...*reducing water consumption*; 2.4-3: *Efficient water use...reducing the amount of energy required by a drinking water system...therefore, there are also energy and financial savings*; also (Energy Efficiency) Business Case GPR per 3.5-5: *Projects that achieve the remaining increments of energy efficiency.* (\$677,347).

<sup>1</sup> Alpine Meadows W&SD Facility Plan, May 2012, Welch Comer & Associates

<sup>2</sup> 7-1-15 Communication, Karen Osterdock P.E., Welch Comer & Associates – McNeill, IDEQ SRF